

REMARKS

Claims 1-14 are pending.

Correction of Specification

Minor errors are corrected in the specification. For example, at line 2 of paragraph [0028] "FIG. 2" has been amended to "FIG. 3." Also, at line 7 of paragraph [0032], reference numeral "100" has been amended to become "200." In this regard, reference numeral "100" has been replaced by "300" in FIG. 1 and reference numeral "3" in FIG. 2 has been changed to "300." Corrected FIGs. 1 and 2 are submitted herewith.

Claim Rejections – 35 USC §102/103

Claims 1-14 are rejected under 35 USC 102(e) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over U.S. Patent No. 6,989,876 to Song et. al. ("Song"). The Examiner states:

Figs. 11-13 of Song either anticipates or renders obvious the various "dots" recited in combination with their surrounding circuitry. Thus, the first and second dots in which the first dot includes three primary colors, the second dot includes two primary colors and a white pixel is anticipated by Fig. 11 which shows a first dot, RGB and a second dot, RWG. A plurality of gate lines are disclosed in col. 9 line 58, and a plurality of data lines are disclosed in col. 10 line 9 to meet this limitation in the claims. See Fig. 11 to anticipate the last clause of Claim 1 and Claims 2 and 3. The particular sequence recited in Claims 4, 5, 7-9 and 11- 13; and the "rendered" pixels of Claims 6, 10 and 14 are either inherently met by Song's disclosure or are an obvious variation of the Song disclosure under 35 USC 103 well within the skill of the worker in the art. For example, see col. 9 line 17 in which Song proposes "alternative" locations for their pixels, and col. 9 line 33 wherein "rendering" dots "may include" different colored pixels.

Applicant respectfully traverses the Examiner's rejection. As explained in Song's col. 5,

lines 25-26, a “dot” is a term of art which refers to “a basic element of an image.” Thus, the Examiner’s statement that “Fig. 11 shows a first dot RBG and a second dot RWG” is not correct. In fact, Song teaches, at col. 9, lines 29-35, that the dots in Figs. 11-13 each has the same set of pixels (i.e., each dot having all the primary colors and white):

A dot for displaying an image preferably includes an above-described set of pixels including a pair of blue and white pixels B and W, a pair of red pixels R, and a pair of green pixels G.

However, when using rendering, a dot may include a pair of blue and white pixels B and W and a pair of red and green pixels in a column.

At col. 5, lines 48-50, Song teaches that having all the primary colors and white in the same dot provides optical efficiency without increasing the total area of the dot:

In this embodiment, since one dot includes red, green, blue and white pixels, the optical efficiency is improved without increasing the total area of the dot.

In contrast, Applicants’ Claims 1 and 11 each recite a matrix having two or three different types of dots with different pixel compositions. For example, Claim 1 recites:

1. A four color liquid crystal display comprising:

a plurality of first and second dots arranged in a matrix, each of the first dots including three primary color pixels and each of the second dots including two primary color pixels and a white pixel, each pixel including a pixel electrode and a switching element;

a plurality of gate lines extending in a row direction for transmitting a gate signal to the switching elements; and

a plurality of data lines extending in a column direction for transmitting data signals to the switching elements,

wherein the first dots and the second dots
are alternately arranged both in a row direction and
in a column direction.

(emphasis added)

To modify Song in the direction of Claim 1 or Claim 11 would defeat Song's purpose of optical efficiency. Thus, Song teaches against Claims 1 and 11 and their respective dependent Claims 2-10 and 12-14. Accordingly, Applicants respectfully submit that Song neither discloses nor suggests any of Claims 1-14.

Further, because Song and the present Application were both owned, at the time the present invention was made, by Samsung Electronics Co., Ltd., Song cannot be used to reject Claims 1-14 under 35 U.S.C. § 103(a). To overcome this rejection, Applicants' Attorney provides this statement:

The present application, serial no. 10/550.238, and U.S. Patent 6,989,876, at the time the invention of the present application was made, were owned by Samsung Electronics Co., Ltd.

Therefore, Applicants respectfully request reconsideration and allowance of Claims 1-14.

Claim Rejections – 35 USC §103

Claims 1-14 are rejected under 35 USC 103(a) as being unpatentable over Japan Patent Publication No. 02-245733 to Saitou, Teruji ("Saitou").

Applicant respectfully traverses the Examiner's rejection, noting that the reference does not disclose every element of Applicant's claims. More specifically, as in Song above, the reference does not disclose the dots with different sets of color pixels arranged in a matrix. Saitou discloses a liquid crystal display screen having dots formed encompassing pixels of four color filters arranged

in two lines. Each dot includes all the primary colors and white filters R, B, G, W. (e.g., FIG. 1(a) and 1(b)). Accordingly, Saitou teaches that the dots are all the same. Claim 1 is thus patentable over Saitou for at least the reason that it recites “the first dots and the second dots arranged in a matrix, each of the first dots including three primary color pixels, and including two primary color pixels and a white pixel[.]” Similarly, Claim 11 is thus patentable over Saitou for at least the reason that it recites “the first to third dots arranged in a matrix, each of the first dots including red, green, and blue pixels, each of the second dots including red, green, and white pixels, and each of the third dots including green, blue, and white pixels[.]” These features simplify the data conversion of three color image data into four color image data and give a sub-pixel rendering effect.

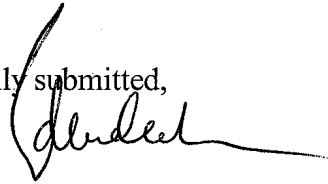
Claims 2-10, 12-13 and 14 depend from claims 1 and 11 and are thus also patentable over Saitou for at least this same reason.

Conclusion

In light of the forgoing, Applicant respectfully requests that the rejections be withdrawn and the claims allowed. The Examiner is invited to call Applicant's attorney at the number below in order to speed the prosecution of this application.

The Commissioner is authorized to charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 50-2257.

Respectfully submitted,

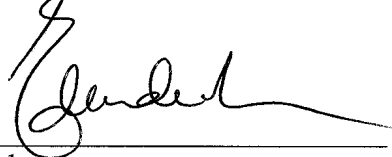


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